

	Question	Answer(s)
1	Can you please email the presentation following the webinar? Then I can listen more & take notes less.Thanks	Yes, presentation materials will be posted after
2	600,000 people and \$200 Billion"- is this people who are actually touch by water, or the larger system of impacted communities and economies?	live answered
3	What is HERA?	USGS Hazard Exposure Reporting and Analytics web tool
4	Can you say more about the operational flood modeling for SF Bay and what that will entail?	live answered
5	What is an operational flood model (in SF Bay)- does that mean integrated Bay and riverine flow	live answered
6	Can you please repeat where the GIS layers are available to download?	Download links will be included in follow up materials
7	Patrick mentioned we could get the OCOF layers from another USGS website, can you provide the link?	Yes, we will give links as follow up to today's webinar.
8	Can you elaborate at all on the climate adaptation modeling that will be coming?	This is pilot work being done in SF Bay, looking at how flood risk changes with green and grey infrastructure options, done in partnership with UCSC, TNC and San Mateo County. But we also have always had some options in the coastal change models across the state, where we model long term coastal change (beaches and cliffs) assuming infrastructure stays in place and halts erosion, or we remove hard structures and let the coast evolve naturally, the so called "hold the line" scenarios.
9	Approximately when do you expect to release the 3 m scenario for south of Pt Conception?	Probably not until 2023, but there may be some scenarios we have in the can that can be used in the interim as an apporoxmiation, such as 2 m of SLR + the annual storm which might roughly equate to 3 m of SLR and no storm.
10	modeling future work a bit more? Missed the details of that and when it is expected to be released.	See my answer to a similar query, but also happy to discuss this in more detail offline if you like (pbarnard@usgs.gov)
11	Patrick - Are there plans to include a wave momentum zone with future CoSMoS outputs (i.e. similar to FEMA V-zone)? This would be great for planning in higher energy shorelines versus "still" flooding in bays/overwashed basins, etc. Thanks!	We are currently working on producing that zone between wave set-up and max run-up statewide, which I believe approximates the V-zone. Previously we only provided the run-up points not polygons.
12	Is groundwater rise now intergrated into all CA regions?	Yes, the long-term groundwater table outputs are out for all of CA, and I'll be presenting on that here shortly.

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13	Will modflow be integrated into OCOF viewer?	The groundwater hazard in the new OCOF viewer is based on the MODFLOW modeling. Pick "Groundwater" from the hazard map "scenario topic" dropdown
14	Do OCOF and USGS personell have any hand in the development of the bay area's ART sea level rise viewer? Or are you completely separate	Completely separate, though we have been discussing synergies for many years, and the model physics underpinning both efforts are similar.
15	Inches and Feet options on SLR please!	There is a "Use ft" button to press right above the Sea Level Rise slider
16	How is depth to land surface from water surface displayed or numerically available? (The last color spread to 750 cm did not distinguish in a useful manner). Thanks!	Depth grids are available for download as GIS raster files.
17	for Kevin: why did you use MHHW as your sea level as opposed to using a higher tide or mean sea	live answered
18	should we expect to see any locations of "non-progressive" water table modelling effects, similar to how some locations have greater surface flooding with a 20-yr storm in comparison a 100-yr storm?	live answered
19	What was the grid resolution on the model again? Do we think it's able to pick up smaller drainage channels (~5-10 ft widths)?	The models used a 10 m grid spacing - some channels and barriers were not continuous in these models and sometimes have localized impacts
20	groundwater results to consider in a given study area (least vs. most permeable)? Or how to select which results to use? Or should all be reviewed in a given area to understand the range of potential impacts? Any examples or case studies that you can share where these layers have been incorporated	In OCOF, the infographic on the choice of permeabilities has some guidance on this: <a href="https://data.pointblue.org/apps/ocof2_flood_map/images/infographics/groundwater_geology.png">https://data.pointblue.org/apps/ocof2_flood_map/images/infographics/groundwater_geology.png</a>
21	Kevin, what do these models indicate about salt-water intrusion into drinking water along the coast?	We did calculate the thickness of the freshwater lens and some saltwater intrusion, but this is for only the unconfined aquifer. The GIS data are available at <a href="https://www.hydroshare.org/resource/d369b76492a14a2ea5142b9826a61c41/">https://www.hydroshare.org/resource/d369b76492a14a2ea5142b9826a61c41/</a>
22	2) "...have been incorporated into a SLR vulnerability or adaptation study"	We are still at the early phases of organizations using these data. The City of Manhattan Beach plan would serve as a good example (Section 3-22): <a href="https://www.citymb.info/home/showpublisheddocument/47057/637587361918170000">https://www.citymb.info/home/showpublisheddocument/47057/637587361918170000</a>
23	Can you use your data to track how the fresh/saline interface moves inland with time?	Yes, and we did so in the paper, <a href="https://doi.org/10.1038/s41558-020-0874-1">https://doi.org/10.1038/s41558-020-0874-1</a> that I would be happy to share with anyone who needs access.

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24	Seal Level Rising may offer solution with higher groundwater to solve some water shortages? (depends on soil permeability type)	Generally, the water table aquifers are not used for potable or irrigation water along most of the coast. There might be some silver lining with the rising water table creating new wetland areas.
25	Does the model also predict horizontal changes in saline water table? I.e. saltwater intrusion?	Yes, and we did so in the paper, <a href="https://doi.org/10.1038/s41558-020-0874-1">https://doi.org/10.1038/s41558-020-0874-1</a> that I would be happy to share with anyone who needs access. All of the intrusion GIS data are available at <a href="https://www.hydroshare.org/resource/d369b76492a14a2ea5142b9826a61c41/">https://www.hydroshare.org/resource/d369b76492a14a2ea5142b9826a61c41/</a>
26	what are some of the common resources for a local planner to understand local geology/choose a groundwater geology setting in the model? is this typically in general plans or hazard mitigation plans? State geology maps? Im less familiar with where to find this info.	The surficial geology and soils maps of California would be good resources, but they do not provide information on how easily water flows through them, requiring some additional estimation/understanding of hydrogeologic properties. There is a new dataset that I would have used for the modeling that includes GIS data on estimated properties that are relevant to making these choices: Zell, W. O., and W. E. Sanford (2020), Calibrated Simulation of the Long-Term Average Surficial Groundwater System and Derived Spatial Distributions of its Characteristics for the Contiguous United States, Water Resour. Res., 56(8), 1–16, doi:10.1029/2019WR026724. As far as I know, these hydrogeologic aspects are not yet common in planning, but OCOF and HERA might change this. City of Manhattan Beach plan may serve as a good example (Section 3-22): <a href="https://www.citymb.info/home/showpublisheddocument/47057/637587361918170000">https://www.citymb.info/home/showpublisheddocument/47057/637587361918170000</a>
27	Question for Kevin: why are water levels in inland areas less responsive to SLR than coastal areas? Is it because of permeability of soil/other geological factors, or that it takes more time for inland water levels to respond?	The main factor is that the existing drainage/stream network limits how high the water table can rise. Low lying coastal lands will also host seeps and springs that discharge groundwater. The geology sets the slope of the water table, but when the water table intersects the land surface, the water table inland of that intersection won't respond very much. Our models don't include how long it takes for the water table to respond - we find long-term average water table
28	Jeanne- land Improvement value is only improvements that had permits? Not unpermitted?	live answered
29	Jeanne- I wasn't clear - Is the exposure analysis available at the Census bloc level?	live answered

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30	Is it possible to access CoSMoS model outputs as a WSE instead of a flooding depth? (i.e., for use as boundary conditions in riverine/estuarine hydraulic models?)	live answered
31	Are there data limitations in the three northern counties that led to them being omitted from the original models? Interested in Humboldt Bay region in particular, since relative rate of SLR is double the state average due to tectonic subsidence.	live answered
32	Many areas sewage systems pipe infrastructure may be threatened with seawater and ground	Yes! This is one of the more immediate hazards that lowlying areas are already facing